Cumulative Index 1990

Volume 6

February	THE PERIONYCHIUM, pages 1–162
May	BURNS OF THE UPPER EXTREMITY, pages 163–354
August	HAND INJURIES IN SPORTS AND PERFORMING ARTS, pages 355–549
November	THE PEDIATRIC UPPER EXTREMITY, pages 551–751

Note: Page numbers of article and issue titles are in **boldface** type.

Acrosyndactyly, 568–569
Activities of daily living, rehabilitation of burned hand, 286–290
Adhesions of proximal nail fold, 94–96
Aesthetic aspects of surgery, **343–349**
Age, of burn patient, 298
  in cerebral palsy, 701
  risk factor in instrumental musicians, 370–371
  and thumb reconstruction, 638–639
Algorithm for burn treatment, **233–238**
Amputation, of distal phalanx, in nail bed avulsions, 54
  evaluation and treatment of hand and wrist disorders, 412
Anatomy, of elbow disorders, 507–508
  of finger nail injuries, 23–25
  of perionychium, 2–4, 137
    eponychium, 3
    hyponychium, 2
    nail bed, 4
    nail fold, 4
    lunula, 4
    paronychium, 3
    sterile matrix, 4
  of polydactyly, radial, 577–578
  of radial dysplasia, 594
  of syndactyly, 556–560
Anesthesia, for surgical repair of perionychium, 139
Aneurysms, arterial, sports-related, 464–465
Antibacterial agents, topical use for burns, 299–300
Apert's syndrome, and syndactyly, 569–570
Arteries, aneurysms and thromboses, sports-related, 464–465
Arthroscopy, of wrist, 478
Arthrotomy, of wrist, 478
Athetosis, in cerebral palsy, 701
Autografting, 301
Axillary contractures, 262–263

Baseball, elbow disorders, 509–510
Bass player, risk factors for injuries, 373
Bennett's fracture analogue, 726
Biomechanics, of elbow disorders, 507–508
Blisters, in hand and wrist disorders, 412
Blood supply, hand of musical patient, 529
Bone(s), avascular and vascular transfer for ectrodactyly, 612–614
  carpal and metacarpal orthotics, 389
  in instrumental musicians, 368
  in nail bed avulsions, 52–53
  in nail reconstruction, 65–66
  overuse injuries in hand and wrist, 361
  phalanges as grafts, 643–645
  in polydactyly, radial, 586
Botulinum toxin type A, for hand cramps, 426
Bowler's thumb and finger, 461
Boxer's knuckle, 474
Brass players, common specific problems, 537
Breath control, in musical patient, 533–534
Bromide burns, 257–258
Burns of upper extremity, **163–349**
  aesthetic aspects of surgery, **343–349**
    case study, 346–349
  chemical burns, **253–259**
    case studies, 258–259
    treatment principles, 254–258
  in children, **221–232, 711–721**
    early care, 711–716
    epidemiology, 711
    excision and grafting, **305–317**
      burns of more than 75% of body surface, 315–316
      clinical methods, 313–314
      cross-infection and environmental control, 312
      excision and closure, 314–315
      grafting and primary wound closure, 310–311
      immunosuppression, 312
      nutrition, 312–313
      operative management, 308
      silver nitrate therapy, 312
      skin grafts, 311–312
        technical considerations, 306–308
          patient selection, 306–307
          selection of area to excise, 307–308
          timing and extent of excision, 307

Burns of upper extremity *(Continued)*
techniques of primary excision, 308–310
late care, 716–721
nutrition, 222–224
pain management, 224
psychosocial aspects, 224
rehabilitation, 227–230
surgery, 224–227
indications, 224–225
infection, 226
postoperative care, 226–227
technique, 225–226
timing of, 225
wound care, 222
contractures, **261–279**
axillary, 262–263
of elbow, 263–265
of proximal interphalangeal joint, 268–272
reconstruction, 261–262
functional requirements, 261
priorities, 262
radiographs, 262
timing, 261
soft tissue coverage, 262
syndactyly, 267–268
of thumb and first web space, 272–278
of wrist and metacarpophalangeal joints, 265–267
decision-making, **233–238**
algorithm, 236
history, 233–236
electrical. See *Electrical burns.*
historical treatment, **163–190**
antiquity, 163–165
Middle Ages, 165–177
skin grafting, 177–189
management of, **297–303**
age of patient, 298
antibacterial agents, 299–300
associated injuries, 298
autografting, 301
cooperation of patient, 298
depth of injury, 297
dressings, 300
early motion, 298–299
extent of burn, 297
full-thickness wounds, 302
homografts and heterografts, 300–301
location of burn, 298
postgraft therapy, 301–302
sepsis, 297
splinting, 300
Mount Vernon Hospital experience, **191–209**
classification, 191–192
dorsal burns, 194–195
exposed structures, 195–196
first web space and thumb, 199
flap cover of dorsum of hand, 196–199
full-thickness burns, localized, 203
immediate management, 192–193
postburn therapy, 193
rehabilitation, 203–207
superficial burns, 193–194
primary tangential excision, **211–219**
in children, 217
definition of, 212–213
depth assessment, indications for surgery, 213–214
double-layered epidermis, 219
early excision, 212
to fascia, 213
priority of hand surgery, 214–217
dressing following excision, 215
grafting, 215
technique, 214–215
tourniquet use, 217
reconstructive procedures, 218–219
rehabilitation, 217, **281–292**
secondary repair, **319–341**
contractures, interdigital, 327–330
thumb, 327–330
irreparably damaged hands, 340
joints, 330–340
distal interphalangeal problems, 340
elbow, 330
metacarpophalangeal finger joints, 335–337
proximal interphalangeal problems, 337–340
wrist, 330–335
surface defects, 321–327
donor tissues, 321–323
fingernails, 327
recipient sites, 323–326
resurfacing with flaps, 326–327
skin graft placement and aftercare, 326
ulceration and carcinoma, 327
skin substitutes, **239–242**
artificial skin, 239–240
composite skin replacement, 241
cultured epithelial cells, 240–241
epithelial cultured-collagen matrix, 241

Capitate, avascular necrosis, 499
Carcinoma, after burns, 327
squamous cell and basal cell, of perionychium, 149
subungual, 126–128
Carpal bone, fractures in children, 724–725
orthotics, 389
Carpal tunnel syndrome, 455–456
Carpenter's syndrome, 570
Carpometacarpal joints, sports-related injuries, 449–451
Cello, risk factors for injuries, 373
Cerebral palsy, **697–709**
nonsurgical treatment, 697–699
medications, 699
orthoses, 698
physical and occupational therapy, 698
surgical objectives, 699–702
operative procedures, 702–708
elbow flexion, 702–703
finger flexion deformities, 706
forearm pronation, 703–704
thumb-in-palm deformity, 706–708
weak finger extension, 705–706
wrist flexion and ulnar deviation, 704–705
patient evaluation, 700–702
age, 701
athetosis, 701
intelligence, 700
physical examination, 701–702
sensation, 700
voluntary use of hand, 700
Cheiralgia paresthetica, 459–461
Chemical burns, **253–259**
case studies, 258–259
treatment, 254–258
bromide, 257–258
chemotherapy, 257
dental plaster, 258
dimethylsulfoxide, 258
ethylene oxide, 258

hydrofluoric acid burns, 254–256
oxidizing and reducing agents, 254
peppermint oil, 258
phenols, 256–257
white phosphorus, 257
Chemotherapy burns, 257
Children. See *Burns of upper extremity, in children; Pediatric upper extremity.*
Chondromalacia, carpal, 501
Classification, of cleft hand, 663
of ectrodactyly, 607–608
of finger nail injuries, 25–27
of polydactyly, radial, 578–580
of syndactyly, 555
Cleft hand, **661–671**
associated anomalies, 663–665
classification, 663
clinical characteristics, 663
definition, 661–662
etiology, finger ray induction, 662–663
incidence and genetics, 662
syndactyly, 572
treatment, 665–671
flexion deformity of finger, 671
indication for, 665
interdigital space reduction, 665–668
partial syndactyly of thumb and index finger, 668–670
preoperative care, 665
syndactyly between ring and little finger, 670
thumb deviation, 670–671
timing of surgery, 665
Collagen matrix, in skin substitutes, 241
Conditioning, and elbow disorders in baseball, 509
Congenital anomalies of nail bed, 18–19
Constriction ring syndrome, syndactyly in, 570
Contractures, burn. See *Burns of upper extremity, contractures.*
metacarpophalangeal finger joints, 335–337
secondary repair, 327–330
wrist, 330–335
in syndactyly, 566–567
Contusions, of gymnast's wrist, 504
Cramps of hand. See *Dystonia, focal.*
Craniofacial syndromes, syndactyly in, 569–570
Crooked nail reconstruction, 63
Cysts of perionychium, 115–117

Dental plaster burns, 258
de Quervain's disease, 467–469
Dermatofibroma, of perionychium, 117–119
Digital augmentation. See *Ectrodactyly.*
Dimethylsulfoxide burns, 258
Dislocations. See *Fractures and dislocations.*
Distal interphalangeal joint, orthotics, 389–390
sports-related injuries, 437–438
Distal posterior interosseous nerve impingement syndrome, 458
Distal radioulnar joint, 489
Documentation, in syndactyly, 559
Donor tissues, for surface defects, 321–323
Dressings, for burns, 300
for nail bed avulsions, 54–55
after primary tangential excision, 215
Drug effects, and nail bed injuries, 17–18
Dysplasia, radial. See *Radial dysplasia.*
Dystonia, focal, **417–428**
botulinum toxin type A injections, 426
definitions, 417
evaluation and treatment of hand and wrist disorders, 411
historical cramps, 418–419
occupational cramps, 424
pathophysiology, 422–424
central theories, 422–423
functional etiology, 424
peripheral etiology, 423–424
patients of Massachusetts General Hospital and Musical Medicine Clinic, 419–422
peripheral explanations, 424–425
physical findings, 417–418
previous therapies, 425–426
therapies in literature, 425
writer's cramp, 417–418

Echondroma, 124–125
Ectrodactyly, **607–615**
bone transfer, avascular and vascular, 612–614
digit distraction-lengthening, single and multiple, 614
digital augmentation, with lengthening, 611–612
without lengthening, 609–610
incidence and classification, 607–608
reconstruction, 608–609
Edema, in rehabilitation of burned hand, 284–285
Elbow, in cerebral palsy, 702–703
contractures, 263–265
disorders in athletes and musicians, **507–515**
anatomy and biomechanics, 507–508
in baseball, 509–510
in football, 508–509
in gymnastics, 510–512
in musicians, 513–514
in tennis, 512–513
secondary repair, 330
Electrical burns, **243–251**
background, 243–244
late sequelae, 249–250
management, 248–249
pathogenesis, 244–247
patient evaluation, 247–248
Embryology, of perionychium, 6
of syndactyly, 555–556
Epidemiology, burns in children, 711
in performing artists, **365–377**
in instrumental musicians, 366–369
musculoskeletal injuries, 366–368
nerve-entrapment syndromes, 368–369
prevention, 375–376
risk factors, 369–375
age and gender, 370–371
instrument-associated, 371–375
occurrence and specific factors, 370
playing time and stress, 371
in sports, **379–381**
fractures, skeletal injuries, 379–380
gymnastic injuries, 493–495
nerve injuries, 380
open injuries, 379
tendon injuries, 380
vascular injuries, 380
thumb hypoplasia, 617–618
Epidermis, double-layered, and primary tangential excision, 219
Epithelial cells, cultured, as skin substitutes, 240–241
Eponychium, anatomy of, 3
in finger nail injuries, 23–24
reconstruction, 62

Ethylene oxide burns, 258
Etiology of cleft hand, 662–663
Excision, primary, burns in children. See *Burns of upper extremity.*
Exercise, therapeutic, 288–290
Exostosis, subungual, 124
  See also *Hereditary multiple exostosis.*
Extensor carpi ulnaris, stenosing tenosynovitis and subluxation, 470
Extensor digiti minimi tendinitis, 469–470
Extensor indicis proprius syndrome, 469
Extensor pollicis longus tenosynovitis, 469
Extensor tendon, post-traumatic subluxation, 474
Extra-octave fracture, 731–732

Fascia, primary tangential excision to, 213
Fibrosis, perineural, of digital nerves, 461
Fibrous tissue lesions of perionychium, 119–120
Finger rays, and cleft hand, 662–663
Finger nail repair, 327
  ingrown, 142–143
  injuries, acute, **23–37**
    anatomy and histology, 23–25
      eponychium, 23–24
      germinal matrix, 24
      hyponychium, 25
      nail, 23
      paronychium, 25
      sterile matrix, 24–25
    classification of injury, 25–27
    clinical treatment, 27–29
    discussion of, 35–37
    mechanism of injury, 25
    nail bed care, 25
    surgical repair, 31–33
    technique, 29–31
  prosthetic substitution, **105–111**
    digital, mini, 107–108
      submini, 108–110
    fixation, 105–106
Fingers, extension and flexion in cerebral palsy, 705–706
  drumming in musical patients, 529
Fingertip injuries, 734–735
Fixation, of finger nail prosthesis, 105–106
Flaps, of dorsum of hand, 196–199
  in secondary repair, 326–327
Flexion deformity, in cleft hand, 671
Flexor carpi radialis tendinitis, 471
Flexor carpi ulnaris tendinitis, 470–471
Flora of perionychium, 137–139
Flute, common specific problems, 536–537
  risk factors for injuries, 373–375
Focal dystonia. See *Dystonia, focal.*
Foot closure, in microvascular nail transfer, 75
Football, elbow disorders, 508–509
Forearm pronation in cerebral palsy, 703–704
Fractures and dislocations, in children, 724–733
    Bennett's fracture analogue, 726
    carpal fractures, 724–725
    collateral ligament of thumb, 726
    distal phalanx fractures, 733
    extra-octave fracture, 731–732
    interphalangeal dislocations, 729–730
    mallet finger, 733
    metacarpal head fracture, 728
    metacarpal-phalangeal dislocations, 728–729
    phalangeal fractures, 730–733
    proximal phalanx fractures, 731
    scaphoid fractures, 725–726
    thumb dislocation, 726
    thumb-phalanx fracture, 726–728
  sports-related, 379–380, 411, **429–453**
    fractures, 434–437
      metacarpal, 436–437
      phalangeal, 434–436
    gymnast's wrist, 496–497, 503–504
    ligament injuries and dislocations, 437–451
      carpometacarpal joints, 449–451
      distal interphalangeal joint, 437–438
      metacarpophalangeal joint, 444–447
      physeal injuries, 451
      proximal interphalangeal joint, 438–444
    methods, 429–434
      general principles, 429–430
      materials, 430–434
      surgical treatment, 430
  of wrist. See *Wrist.*
Frostbite, in children, 736
Functional hand skill, 286–290
Fungal infections, of perionychium, 145–147

Ganglia, in gymnast's wrist, 502
Gender, risk factor in instrumental musicians, 370–371
Genetics, of cleft hand, 662
  of polydactyly, radial, 580–583
  of syndactyly, 555, 559–560
Germinal matrix, developmental physiology, 5–6
  in finger nail injuries, 24
  in nail bed avulsions, 49–50
Glomus tumor, 120–121
  surgical repair, 147–148
Grafts, for burns, 300–301
    in children. See *Burns of upper extremity.*
  historical treatment, 177–189
  in nail bed avulsions, 41–46
    full-thickness, from other digits, 43
    skin, dermal, and xenografts, 41–42
    split-thickness, 43–46
  nail, for reconstruction. See *Nail, grafts for reconstruction.*
  after primary tangential excision, 215
  skin, in syndactyly, 560, 563–566
  split-thickness nail bed, for adhesions of proximal nail fold, 94–96
Granuloma, pyogenic, of perionychium, 147
Grind testing, in musical patient, 531
Growth mechanism injury, 724
Guitars, common specific problems, 535
  risk factors for injuries, 371–372
Gymnast's wrist, **493–505**
  acute osseous scaphoid fracture, 503
  avascular necrosis of capitate, 499
  carpal chondromalacia, 501
  chronic osseous injuries, 495–496
    distal radius physeal stress reaction, 495–496
    distal radius and ulna physeal stress injury, 496
  distal radius fracture, 503–504
  distal radius physeal arrest, 499–500
  elbow disorders, 510–512
  epidemiology, 493–495
  ganglia, 502
  instability, 502–503
  Madelung's deformity, 499
  scaphoid impaction syndrome and scapholunate area injury, 497–498
  soft tissue, capsulitis, 501

contusions, 504
splints, 501
sprain, 504
stress fracture of scaphoid, 496–497
triangular fibrocartilage complex tears, 502
triquetrolunate impingement, 500
ulnar impaction syndrome, 498
wrist impingement, 501

Hand, burns of, **163–349**
dissection in microvascular nail transfer, 74–75
injuries in sports and performing arts, **355–544**
pediatric, **551–738**
perionychium, **1–157**
Handlebar palsy, 458
Harp, risk factors for injuries, 373
Hemangioma, of perionychium, 121–122
Hereditary multiple exostosis, **685–692**
case reports, 686–687
discussion, 687–691
materials and methods, 685
results, 685–686
Herpetic whitlow, 143–145
Histology, of finger nail injuries, 23–25
Historical treatment of burns, **163–190**
antiquity, 163–165
Middle Ages, 165–177
skin grafting, 177–189
Hook of hamate fractures, 457, 481–482
Hooked nail reconstruction, 63–65
grafts, 97–98
Hydrofluoric acid burns, 254–256
Hyperhidrosis, 412
Hyponychium, anatomy of, 2
in finger nail injuries, 25
post-traumatic hyperplasia, 96–97
Hypoplastic hand, syndactyly in, 570

Iatrogenic injuries to nail bed, 11–14
Immobilization, of wrist injuries, 479–480
Immunosuppression, in children, 312
Incidence, of cleft hand, 662
of ectrodactyly, 607–608
of polydactyly, radial, 580
of radial dysplasia, 591–594
of syndactyly, 555
Infections, in burn wounds, 226
and nail bed injuries, 17
of perionychium, 122
Inflammation, elbow disorders in baseball, 509–510
Instability patterns, 490
gymnast's wrist, 502–503
Instrument, physical weight of, 533
Intelligence, in cerebral palsy, 700
Interdigital space reduction, in cleft hand, 665–668
Intersection syndrome, 469
Ischemia, digital, 463–464
in nail reconstruction, 66–68

Joints, in instrumental musicians, 367–368
orthotics, 389–390
in polydactyly, radial, 586
repair of, 330–340
distal interphalangeal, 340
elbow, 330
metacarpophalangeal finger contracture, 335–337
proximal interphalangeal, 337–340
extension fixation, 337–338
flexion fixation, 338–340
wrist contractures, 330–335
See also *Fractures and dislocations, sports-related; individual joints.*

Keratoacanthoma, subungual, 125–126
surgical repair, 147
Keyboard, common specific problems, 534–535
evaluation and treatment of hand and wrist disorders, 407–408

Ligaments, deep transverse metacarpal, in cleft hand, 666–668
injuries and dislocations, 437–451
carpometacarpal joints, 449–451
distal interphalangeal joint, 437–438
metacarpophalangeal joint, 444–447
physeal injuries, 451
proximal interphalangeal joint, 438–444
wrist, injuries of. See *Wrist.*
Linberg's syndrome, 471
Linear ridging, 90–94
Load and motion, in musical performance, 397–400
in sports, 400–401
Lunotriquetral injury, 488–489
Lunula anatomy, 4
Lymphatics of perionychium, 7

Madelung's deformity, acquired, 499
Mallet finger, 733
Massachusetts General Hospital, hand dystonic syndromes, 419–422
Materials, for sports-related fractures and dislocations, 430–434
Matrix, germinal. See *Germinal matrix.*
sterile. See *Sterile matrix.*
Mayo Clinic, evaluation and treatment of hand and wrist disorders, 414
Melanoma of perionychium, surgical repair, 148
Metacarpals, in cleft hand, 666
fractures and dislocations, 436–437, 728–729
Metacarpophalangeal joints, burn contractures of, 265–267
sports-related injuries, 444–447
Metastasis, tumors of perionychium, 131
Microsurgery, aesthetic aspects of, **343–349**
Middle Ages, burn treatments, 165–177
Motion of hand and wrist, 393–394
Mount Vernon Hospital experience. See *Upper extremity, burns of.*
Movement, range of, in musical patient, 529
Muscles, of musical patient, 529, 530–531
overuse injuries in hand and wrist, 359–361
Musicians. See *Performing arts, hand and wrist injuries.*

Nail, in finger nail injuries, 23
grafts,in nail bed avulsions, 43

Nail *(Continued)*
for reconstruction, **79–102**
adhesions of proximal nail fold, 944–96
clinical data, 88–89
discussion, 103
experimental studies in primates, 80–88
hooked nail, 97–98
lateral deviation of nail, 97
linear ridging, 90–94
nonadherence of distal nail, 89–90
post-traumatic hyperplasia of hyponychium, 96–97
total nail replacement, 98–99
microvascular transfer, **69–76**
discussion of, 77
foot closure, 75
hand dissection, 74–75
toe dissection, 70–74
toe markings, 69–70
reconstruction, **59–68**
absence of nail, 68
bony irregularity, 65–66
crooked nail, 63
eponychium, 62
hooked nail, 63–65
ischemic deformities, 66–68
nonadherence, 59–60
pachyonychia, 66
split nail, 60–62
in syndactyly, 567
Nail bed, anatomy, 4
avulsions, **39–58**
amputation of distal phalanx, use of composite grafts, 54
bone defects, 52–53
cleansing and splinting, 42–43
discussion, 57
dressings, 54–55
germinal matrix avulsion, 49–50
grafts, full-thickness from other digits, 43
skin and dermal, 41–42
split-thickness nail bed, 43–46
incomplete, 40–41
nail grafting, 43
replacement of avulsed segment, 49–50
rotation nail bed pedicle flaps, 48–49
injuries, **9–21**, 733–734
discussion of, 21
etiology, 9–19
congenital anomalies, 18–19
drug effects, 17–18
iatrogenic injury, 11–14
infection, 17
self-inflicted injury, 14–15
systemic disease, 16–17
trauma, 9–11
tumor, 15–16
Nail fold anatomy, 4
Nerve compression syndromes, 410–411
Nerve entrapment syndromes, in instrumental musicians, 368–369, 531–533
orthotics, 390–392
Nerves, overuse injuries in hand and wrist, 361–362
of perionychium, 7
in sports injuries, 380
Neurofibroma, of perionychium, 122–123
Neurovascular injuries, in athletes, **455–466**
bowler's thumb and finger, 461
cheiralgia paresthetica, 459–461
nerve injuries, 455–456
radial nerve compression syndromes, 458
ulnar nerve compression syndromes, 456–458
handlebar palsy, 458
hook of hamate fractures, 457
motor branch of first dorsal interosseous, 458
racquet player's pisiform, 457–458
vascular injuries, 461–465
arterial aneurysms and thromboses, 464–465
avulsion injuries, 461–463
digital ischemia, 463–464
in polydactyly, radial, 585
in syndactyly, 558–559
Nonadherence, in nail reconstruction, 59–60, 89–90
Nutrition in children, 222–224
and burns, 312–313

Occupational therapy for cerebral palsy, 698
On-top plasty, for ectrodactyly, 611–612
Onychectomy, total, 149–153
Onycholysis, surgical repair, 145
Onychomycosis, 145–147
Operative techniques, for cerebral palsy, 702–708
elbow flexion, 702–703
finger flexion deformities, 706
forearm pronation, 703–704
thumb-in-palm deformity, 706–708
weak finger extension, 705–706
wrist flexion and ulnar deviation, 704–705
for syndactyly, 560–563
Orthoses, for cerebral palsy, 698
Orthotics, for performing artists and athletes, 520–523
rehabilitation of burned hand, 285–286
Osteochondral/chondral fractures, 482–483
Osteochrondroma, of perionychium, 124
Overuse injuries in hand and wrist, **355–364**, 472–473
bone, 361
etiology, 356–357
history, 355
in instrumental musicians, 366–368
musculotendinous unit, 357–361
muscle, 359–361
tendon, 358–359
nerve, 361–362
pathophysiology, 355–356
treatment, 357, 411
Oxidizing agent burns, 254

Pachyonychia in nail reconstruction, 66
Pain, in children, 224
elbow disorders in baseball, 509–510
in instrumental musicians, 366–367
Parent decisions, **551–554**
decision-making process, 551–552
first interview, 552
initial contact, 552
nonprofessional matters, 553
postoperative splinting, 695
preoperative informational interview, 553
professional data review, 553
specific recommendations, 553–554
surgical period planning, 554
in syndactyly, 559–560
Paronychia, acute, 140
anatomy of, 3
chronic, 140–142
in finger nail injuries, 25

Pediatric upper extremity, burn management, **711–721**
early care, 711–716
epidemiology, 711
late care, 716–721
cerebral palsy, **697–709**
nonsurgical treatment, 697–699
operative procedures, 702–708
surgical objectives, 699–702
cleft hand, **661–671**
associated anomalies, 663–665
clinical characteristics, 663
definition, 661–662
etiology, finger ray induction, 662–663
incidence and genetics, 662
summary, 661
treatment, 665–671
ectrodactyly, **607–615**
bone transfer, 612–614
digit distraction-lengthening, 614
digital augmentation, with lengthening, 611–612
without lengthening, 609–610
incidence and classification, 607–608
reconstruction, 608–69
hereditary multiple exostosis, **685–692**
case reports, 686–687
discussion, 687–691
materials and methods, 685
results, 685–686
parent decisions, **551–554**
decision-making process, 551–552
first interview, 552
initial contact, 552
nonprofessional matters, 553
preoperative informational interview, 553
professional data review, 553
specific recommendations, 553–554
surgical period planning, 554
polydactyly, radial, **577–588**
classification, 578–580
comparative anatomy, 577–578
complications and late reconstruction, 587
historical review, 577
incidence, 580
inheritance and associated syndromes, 580–583
surgical planning and treatment, 583–587
radial dysplasia, **589–605**
clinical presentation, 589–591
current management, 598–602
future trends, 602–603
historical management, 594–598
key points, 603
pathologic anatomy and surgical implications, 594
splinting, postoperative, **693–695**
construction, 694
cooperation techniques, 694–695
parental education, 695
thermoplastic materials, 693–694
super digit, **673–684**
clinical findings, 673
discussion, 673–684
syndactyly, **555–575**
classification and terminology, 555
difficult problems, 568–573
embryology, 555–556
incidence and genetics, 555
pathologic anatomy, 556–560
reconstruction principles and complications, 560–568
thumb hypoplasia, **617–641**
age considerations, 638–639
congenital malformation, aplastic thumb and pouce flottant, 623–626
pollicization, 626–629
epidemiology, 617–618
extrinsic tendon absence, 635–636
history, 619–623
motoring of pollicized digit, 629–631
reconstruction, 631–634
toe-to-thumb transplantation, 636–638
surgical reconstruction, 618–619
thenar muscle absence, 634–635
toe phalanx transplantation, **643–659**
clinical material, 645–646
complications, 651
construction of new joint, 646–649
discussion, 655–658
indications, 646
operative technique, 649–651
phalanges as bone grafts, 643–645
results, 651–655
wrist and hand skeletal injuries, **723–738**
burns, 736
finger tip injuries, 734–735
fractures and dislocations, 724–733
frostbite, 736
growth mechanism injury, 724
nail bed injuries, 733–734
replantations/transplantations, 735–736
Pedicle flaps, rotation nail bed, 48–49
Peppermint oil, 258
Percussion, evaluation and treatment of hand and wrist disorders, 409–410
Percussion instruments, risk factors for injuries, 375
Performance of upper extremity, **393–403**
load and motion, in musical performance, 397–400
in sports, 400–401
motion of, 393–394
strength of, 394–397
Performing arts, epidemiology of hand and wrist injuries, **365–377**
in instrumental musicians, 366–369
musculoskeletal injuries, 366–368
nerve-entrapment syndromes, 368–369
prevention, 375–376
risk factors, 369–375
age and gender, 370–371
instrument-associated risks, 371–375
occurrence and specific factors, 370
See also *Sports and performing arts, hand injuries in.*
Perionychium, **1–157**
anatomy and physiology, **1–7**
anatomy, 2–4
developmental physiology, 4–6
embryology, 6
general information, 1–2
lymphatics, 7
nerve supply, 7
vasculature, 6
finger nail injuries, **23–37**
anatomy and histology, 23–25
clinical treatment, 27–29
injury classification, 25–27
management of, 35–37
mechanism of injury, 25
nail bed care, 25
surgical repair, 31–33
technique, 29–31
microvascular nail transfer, **69–76**
dissection, 70–74

Perionychium *(Continued)*
foot closure, 75
hand dissection, 74–75
toe markings, 69–70
nail bed avulsions, **39–58**
amputation of distal phalanx, use of composite grafts, 54
bone defects, 52–53
cleansing and splinting, 42–43
discussion of, 57
dressings, 54–55
germinal matrix avulsion, 49–50
grafts, full-thickness from other digits, 43
skin and dermal, 41–42
split-thickness nail bed, 43–46
incomplete, 40–41
nail grafting, 43
replacement of avulsed segment, 39–40
rotation nail bed pedicle flaps, 48–49
injuries, **9–21**
etiologies of, 9–19
mechanisms of, 21
nail grafts for reconstruction, **79–102**
adhesions of proximal nail fold, 94–96
clinical data, 88–89
experimental studies in primates, 80–88
hooked nail, 97–98
lateral deviation of nail, 97
linear ridging, 90–94
nonadherence of distal nail, 89–90
post-traumatic hyperplasia of hyponychium, 96–97
total nail replacement, 98–99
nail reconstruction, **59–68**
absence of nail, 68
bony irregularity, 65–66
crooked nail, 63
eponychium, 62
hooked nail, 63–65
ischemic deformities, 66–68
nonadherence, 59–60
pachyonychia, 66
split nail, 60–62
prosthesis for fingernails, **105–111**
fixation, 105–106
mini digital prosthesis, 107–108
submini digital prosthesis, 108–110
surgical repair of infections and lesions, **137–157**
anatomy, 137
anesthesia, 139
flora, 137–139
fungal infections, 145–147
ingrown finger nail, 142–143
keratoacanthoma, 147
melanoma, 148
onychectomy, 149–153
onycholysis, 145
paronychia, acute, 140
chronic, 140–142
pyogenic granuloma, 147
squamous cell and basal cell carcinoma, 149
subungual tumors, 147–148
systemic conditions, 139
viral infections, 143–145
tumors, **113–136**
cysts, 115–117
dermatofibroma, 117–119
discussion, 135
echondroma, 124–125
fibrous tissue lesions, 119–120
glomus tumor, 120–121
hemangioma, 121–122
infection, 122
metastatic, 131
neurofibroma, 122–123
osteochondroma, 124
sarcomas, 131
subungual, exostosis, 124
keratoacanthoma, 125–126
pigmented, 128–131
squamous cell carcinoma, 126–128
of sweat gland, 123–124
wart, 125
Pfeiffer's syndrome, 570
Phalangeal fractures, 434–436, 730–731
See also *Fractures and dislocations.*
Phenol burns, 256–257
Phosphorus burns, 257
Physical therapy for cerebral palsy, 698
Physiology of perionychium, 4–6
germinal matrix, 5–6
sterile matrix, 6
Physis, in gymnast's wrist, 496, 499–500
sports-related injuries, 451
Pigmented tumors, subungual, 128–131
Pinch and grip, in musical patient, 533
Pisiform, in racquet players, 457–458
Playing time, risk factor in instrumental musicians, 371
Pollicization, for congenital thumb hypoplasia, 626–629
motoring of digit, 629–631
Polydactyly, concealed, 572–573
radial, **577–588**
classification, 578–580
comparative anatomy, 577–578
complications and late reconstruction, 587
historical review, 577
incidence, 580
inheritance and associated syndromes, 580–583
surgical planning and treatment, 583–587
bone and joint, 586
neurovascular structures, 585
soft tissue envelope, 585
tendons and tendon sheaths, 585–586
triphalangeal thumb, 586–587
Posture, of musical patient, 534
Pouce flottant, thumb hypoplasia, 623–626
Prevention, **383–392**
conditioning, 383–387
in performing arts, 375–376, 384
in sports, 384–387
orthotics, 387–392
for nerve entrapment, 390–392
types, 389–390
Primate nail grafts for reconstruction, 80–87
Profundus avulsion injuries, 473–474
Prosthesis for finger nails, **105–111**
digital, mini, 107–108
submini, 108–110
fixation, 105–106
Proximal interphalangeal joint, contractures, 268–272
orthotics, 389
sports-related injuries, 438–444
Psychosocial aspects, burns in children, 224
rehabilitation of burned hand, 291

Racquet sports, pisiform injuries, 457–458
Radial dysplasia, **589–605**
clinical presentation, 589–591
future trends, 602–603

incidence of associated anomalies, 591–594
management, current methods, 598–602
historical perspectives, 594–598
pathologic anatomy and surgical implications, 594
Radial nerve compression syndromes at wrist, 458
Radial polydactyly. See *Polydactyly, radial.*
Radial styloid fractures, 483–485
Radiology, of burn contractures, 262
Radius in gymnast's wrist, distal physeal arrest, with ulnar positive variance, 499–500
distal physeal stress reaction, 495–496
fracture of, 503–504
Reconstruction, of nail bed deformities, **59–68**
nail grafts. See *Nail, grafts for reconstruction.*
of polydactyly, radial, 587
after primary tangential excision, 218–219
of syndactyly, 560–568
Reducing agent burns, 254
Reed instruments, risk factors for injuries, 373
Rehabilitation, **517–524**
acute treatment, 518
of burned hand, **281–292**
activities of daily living, 286–290
edema, 284–285
functional hand skill, 286–290
Mount Vernon Hospital experience, 203–207
orthotics, 285–286
positioning, 285
psychosocial issues, 291
scar management, 290–291
vocational issues, 291–292
wound management, 281–284
of children, 227–230
closed-wound phase, 228–230
open-wound phase, 227–228
diagnostic concerns, 517–518
evaluation and treatment of hand and wrist disorders, 412–414
orthotics, 520–523
after primary tangential excision, 217
rehabilitation therapy, 518–523
of wrist injuries, 480
Replantation, in wrist and hand skeletal injuries, 735–736
Risk factors for instrumental musicians. See *Epidemiology of hand and wrist injuries.*

Saethre-Chotzen's syndrome, 570
Sarcomas, of perionychium, 131
Scaphoid fractures, 480–481
in children, 725–726
in gymnast's wrist, 496–497, 503
Scaphoid impaction syndrome, 497–498
Scapholunate area, in gymnast's wrist, 497–498
dissociation, 487–488
Scars, rehabilitation of burned hand, 290–291
Self-inflicted injury to nail bed, 14–15
Sepsis management, 297–298
Side-to-side plasty, for ectrodactyly, 612
Silver nitrate therapy, in children, 312
Skeleton, in syndactyly, 557–558
See also *Wrist and hand skeletal injuries.*
Skin, grafts, 560, 563–566
in secondary repair, 326
See also *Grafts.*
substitutes for, **239–242**
in syndactyly, 556–557
Soft tissue, coverage of burn contractures, 262
envelope in radial polydactyly, 585
in gymnast's wrist, acute contusions, 504
chronic capsulitis, 501
Splinting, for burns, 300
in gymnast's wrist, 501
postoperative, **693–695**
construction, 694
cooperation techniques, 694–695
parental education, 695
thermoplastic materials, advantages of, 693–694
Split nail reconstruction, 60–62
Sports and performing arts, hand injuries in, **355–544**
dystonia, focal, **417–428**
botulinum toxin type A injections, 426
definitions, 417
general description/physical findings, 417–418
historical cramps, 418–419
historical review, 422–424
occupational cramps, 424
patients of Massachusetts General Hospital and Musical Medicine Clinic, 419–422
peripheral explanations, 424–425
therapies, in literature, 425
previously used, 425–426
elbow disorders, **507–515**
anatomy and biomechanics, 507–508
in baseball, 509–510
in football, 508–509
in gymnastics, 510–512
in musicians, 513–514
in tennis, 512–513
epidemiology of, in performing arts, **365–377**
in sports, **379–381**
fractures and dislocations, sports-related, **429–453**
fractures, 434–437
ligament injuries and dislocations, 437–451
methods, 429–434
musician's hand treatment, **525–544**
comprehensive patient care, 525–526
creative artists' treatment, 541
examination, 529–534
idioms and rules, 525
instrument-specific problems, 534–537
interface redesign, 537–541
musical limbs, 527–529
musical thinking, 525
musician as patient, 526–527
musicianship and goals, 525
overture, 525
neurovascular injuries, **455–466**
bowler's thumb and finger, 461
cheiralgia paresthetica, 459–461
nerve injuries, 455–456
radial nerve compression syndromes, 458
ulnar nerve compression syndromes, 456–458
vascular injuries, 461–465
overuse injuries, pathophysiology of, **355–364**
bone, 361
musculotendinous unit, 357–361
nerve, 361–362
overuse, 355–357
prevention, **383–392**
conditioning, 383–387
orthotics, 387–392
rehabilitation: conditioning and orthotics, **517–524**
acute treatment, 518
diagnostic concerns, 517–518
rehabilitation therapy, 518–523
tendon injuries, **467–476**
anomalous interconnections, 471–472

Sports and performing arts *(Continued)*
overuse syndromes, 472–473
post-traumatic extensor subluxation and boxer's knuckle, 474
profundus avulsion injuries, 473–474
tendinitis, 457–471
treatment of disorders, **405–416**
amputation, 412
blisters, 412
evaluation of upper extremity, 410
focal dystonia, 411
fractures, 411
hyperhidrosis, 412
keyboard, 407–408
Mayo Clinic experience, 414
muscle-tendon overuse syndromes, 411
nerve compression syndromes, 410–411
overview, 405–407
percussion, 409–410
rehabilitation, 412–414
stringed instruments, 408–409
tendon injuries, 412
wind instruments, 409
upper-extremity performance, **393–403**
load and motion, 393–394
in musical performance, 397–400
in sports, 400–401
strength, 394–397
wrist, fractures and ligamentous injuries, **477–491**
evaluation, 477–478
fractures, 480–486
instability patterns, 490
ligamentous injuries, 486–490
treatment, 479–480
of gymnast, **493–505**
acute osseous scaphoid fracture, 503
avascular necrosis of capitate, 499
carpal chondromalacia, 501
chronic osseous injuries, 495–496
distal radius fracture, 503–504
distal radius physeal arrest, 499–500
epidemiology, 493–495
ganglia, 502
instability, 502–503
Madelung's deformity, 499
scaphoid impaction syndrome and scapholunate area injury, 497–498
soft tissue, capsulitis, 501
contusions, 504
splints, 501
sprain, 504
stress fracture of scaphoid, 496–497
triangular fibrocartilage complex tears, 502
triquetrolunate impingement, 500
ulnar impaction syndrome, 498
wrist impingement, 501
Sprain, of gymnast's wrist, 504
Sterile matrix, anatomy, 4
developmental physiology, 6
in finger nail injuries, 24–25
Strength, of hand and wrist, 394–397
Stress, in gymnast's wrist, 495–496
distal radius and ulna physeal injury, 496
scaphoid fracture, 496–497
risk factor in instrumental musicians, 371
String players, evaluation and treatment of hand and wrist disorders, 408–409
common specific problems, 537
risk factors for injuries, 371–373
Super digit, **673–684**
clinical findings, 673
discussion, 673–684
Superficialis interconnections, 472
Surgical repair, of burns, aesthetic aspects, **343–349**
in children, 224–227
indications, 224–225
infection, 226
postoperative care, 226–227
technique, 225–226
timing of, 225
indications for, 213–214
primary tangential excision, 214–215
in cerebral palsy, 699–702
of cleft hand, 665–671
of finger nail injuries, 31–33
of infections and lesions of perionychium, **137–157**
anatomy, 137
anesthesia, 139
discussion, 155
flora, 137–139
fungal infections, 145–147
ingrown fingernail, 142–143
keratoacanthoma, 147
melanoma, 148
onychectomy, 149–153
onycholysis, 145
paronychia, acute, 140
chronic, 140–142
pyogenic granuloma, 147
squamous cell and basal cell carcinoma, 149
subungual tumors, 147–148
systemic conditions, 139
viral infections, 143–145
toe-phalanx transplantation, 649–651
of polydactyly, radial, 583–587
of sports-related fractures and dislocations, 430
of syndactyly, 559, 560
See also *Operative techniques.*
Sweat, hand of musical patient, 529
Sweat gland tumors, of perionychium, 123–124
Symbrachydactyly, 570–572
Syndactyly, **555–575**
acrosyndactyly, 568–569
burn, 267–268
classification and terminology, 555
in cleft hand, 572, 668–670
in constriction ring syndromes, 570
in craniofacial syndromes, 569–570
documentation, 559
embryology, 555–556
first-web, 573
in hypoplastic hand, 570
incidence and genetics, 555
neurovascular, 558–559
parent discussions, 559–560
genetics, 559–560
imperfect result and need for revision, 560
skin grafts, 560
timing of surgery, 560
pathologic anatomy, 556–560
skeletal, 557–558
skin, 556–557
and polydactyly, concealed, 572–573
reconstruction principles and complications, 560–568
contractures and angulation, 566–567
digital loss, 568
nail deformities, 567
operative technique, 560–563

skin graft problems, 563–566
web creep, 563
symbrachydactyly, 570–572
timing, 559
Systemic disease, and nail bed injuries, 16–17
and surgical repair, 139

Temperature, of hand of musical patient, 529
Tendinitis, 467–471
Tendons, auscultation in musical patient, 529–530
extrinsic, in thumb hypoplasia, 635–636
of hand of musical patient, 531
injuries, **467–476**
anomalous interconnections, 471–472
evaluation and treatment of, 412
overuse injuries in hand and wrist, 358–359, 472–473
post-traumatic extensor subluxation and boxer's knuckle, 474
profundus avulsion injuries, 473–474
in sports, 380
tendinitis, 467–471
wrist, dorsal side, 467–470
volar side, 470–471
in polydactyly, radial, 585–586
Tennis, elbow disorders, 512–513
Terminology, of syndactyly, 555
Thenar muscles, in thumb hypoplasia, 634–635
Thermoplastic materials, for postoperative splinting, 693–694
Thromboses, arterial, sports-related, 464–465
Thumb, adduction contractures, 327–330
burn contractures, 272–278
burn management, 199
in cleft hand, 670–671
collateral ligament, 726
dislocation, in children, 726
hypoplasia of, 617–641
age considerations, 638–639
congenital, aplastic thumb and pouce flottant, 623–626
pollicization, 626–629
motoring of digit, 629–631
surgical reconstruction, 618–619
thenar muscle absence, 634–635
toe-to-thumb transplantation, 636–638
epidemiology, 617–618
extrinsic tendon absence, 635–636
history, 619–623
reconstruction, 631–634
orthotics, 389
and phalanx fractures, 726–728
triphalangeal, 586–587
Thumb-in-palm deformity, 706–708
Toe, in microvascular nail transfer, 69–70
dissection, 70–74
phalanx transplantation, **643–659**
clinical material, 645–646
donor and recipient sites, 646
patients, 645–646
complications, 651
construction of new joint, 646–649
discussion, 655–658
indications, 646
operative technique, 649–651
phalanges as bone grafts, 643–645
results, 651–655
Toe-to-thumb transplantation, for thumb hypoplasia, 636–638
Tourniquet, in primary tangential excision, 217
Transplantation, toe-to-thumb, for thumb hypoplasia, 636–638
See also *Toe phalanx transplantation.*
in wrist and hand skeletal injuries, 735–736
Trauma, nail bed injuries, 9–11
Triangular fibrocartilage complex, 489–490, 502
Triquetrolunate impingement, in gymnast's wrist, 500
Tumors, and nail bed injuries, 15–16
of perionychium, **113–136**
cysts, 115–117
dermatofibroma, 117–119
discussion, 135
echondroma, 124–125
fibrous tissue lesions, 119–120
glomus tumor, 120–121
hemangioma, 121–122
infection, 122
metastatic, 131
neurofibroma, 122–123
osteochrondroma, 124
sarcomas, 131
subungual, exostosis, 124
keratoacanthoma, 125–126
pigmented, 128–131
squamous cell carcinoma, 126–128
surgical repair, 147–148
of sweat gland, 123–124
wart, 125

Ulceration, and secondary repair, 327
Ulnar impaction syndrome, 498
Ulnar nerve compression syndromes at wrist, 456–458
Ulnar styloid fractures, 485–486
Upper-extremity burns, **163–349**
aesthetic aspects of surgery, **343–349**
case study, 346–349
algorithm for decision making, **233–238**
algorithm, 236
history, 233–236
chemical burns, **253–259**
case studies, 258–259
treatment principles, 254–258
contractures, **261–279**
axillary, 262–263
of elbow, 263–265
of proximal interphalangeal joint, 268–272
reconstruction, 261–262
soft tissue coverage, 262
syndactyly, 267–268
of thumb and first web space, 272–278
of wrist and metacarpophalangeal joints, 265–267
electrical trauma, **243–251**
background, 243–244
late sequelae, 249–250
management, 248–249
pathogenesis, 244–247
patient evaluation, 247–248
excision and grafting in children, **305–317**
burns of more than 75% of body surface, 315–316
clinical methods and results, 313–314
cross-infection and environmental control, 312
excision and closure, 314–315
grafting and primary wound closure, 310–311
immunosuppression, 312
nutrition, 312–313
operative management, 308
postoperative care, 311–312

Upper-extremity burns *(Continued)*
silver nitrate therapy, 312
skin allografts, 311
technical considerations, 306–308
techniques of primary excision, 308–310
historical treatment, **163–190**
antiquity, 163–165
Middle Ages, 175–177
skin grafting, 177–189
management of, **297–303**
age of patient, 298
antibacterial agents, 299–300
associated injuries, 298
autografting, 301
cooperation of patient, 298
depth of injury, 297
dressings, 300
early motion, 298–299
extent of burn, 297
full-thickness wounds, 302
homografts and heterografts, 300–301
location of burn, 298
postgraft therapy, 301–302
sepsis, 297–298
splinting, 300
Mount Vernon Hospital experience, **191–209**
classification, 191–192
dorsal burns, 194–195
exposed structures, 195–196
first web space and thumb, 199
flap cover of dorsum of hand, 196–199
full-thickness burns, 203
immediate management, 192–193
postburn therapy, 193
rehabilitation, 203–207
superficial burns, 193–194
pediatric, **221–232**
nutrition, 222–224
pain management, 224
psychosocial aspects, 224
rehabilitation, 227–230
surgical considerations, 224–227
wound care, 222
primary tangential excision, **211–219**
in children, 217
definition of, 212–213
depth assessment, indications for surgery, 213–214
double-layered epidermis, 219
early excision, 212
to fascia, 213
priority of hand surgery, 214–217
reconstructive procedures, 218–219
rehabilitation, 217, **281–292**
activities of daily living and functional hand skill, 286–290
edema, 284–285
orthotics, 285–286
positioning, 285
psychosocial issues, 291
scar management, 290–291
vocational issues, 291–292
wound management, 281–284
secondary repair, **319–341**
interdigital contractures, 327–330
irreparably damaged hands, 340
of joints, 330–340
surface defects, 321–327
ulceration and carcinoma, 327
skin substitutes, **239–242**
artificial skin, 239–240
composite skin replacement, 241
cultured epithelial cells, 240–241
epithelial culture-collagen matrix, 241

Vascular injuries in athletes, 380, 461–465
arterial aneurysms and thromboses, 464–465
avulsion injuries, 461–463
digital ischemia, 463–464
Vasculature, of perionychium, 6
Verruca vulgaris, of perionychium, 125
surgical repair, 145
Violin/viola, risk factors for injuries, 372–373
Viral infections, 143–145
Vocational issues, rehabilitation of burned hand, 291–292

Wart, of perionychium, 125
surgical repair, 145
Web creep in syndactyly, 563
Web space, burn management, 199
first, burn contractures, 272–278
Webbing, interdigital, 328–330
Woodwinds, common specific problems, 535–536
evaluation and treatment of hand and wrist disorders, 409
risk factors for injuries, 373–375
Wounds, in children, 222
full-thickness, early excision of, 302
rehabilitation of burned hand, 281–284
Wrist, burn contractures, 265–267
secondary repair, 330–335
flexion, in cerebral palsy, 704–705
fractures and ligamentous injuries, **477–491**
evaluation, 477–478
fractures, 480–486
hook of hamate, 481–482
osteochondral/chondral, 482–483
radial styloid, 483–485
scaphoid, 480–481
ulnar styloid, 485–486
instability patterns, 490
ligamentous injuries, 486–490
extrinsic ligaments, 486–487
intrinsic ligaments, 487–490
treatment, 479–480
gymnast's. See *Gymnast's wrist.*
median nerve compression, 455–456
orthotics, 389
radial nerve compression syndromes, 458
skeletal injuries in children, **723–738**
burns, 736
finger tip injuries, 734–735
fractures and dislocations, 724–733
Bennett's fracture analogue, 726
carpal fractures, 724–725
collateral ligament of thumb, 726
distal phalanx fractures, 733
extra-octave fractures, 731–732
interphalangeal dislocations, 729–730
mallet finger, 733
metacarpal head fracture, 728
metacarpal-phalangeal dislocations, 728–729
phalangeal fractures, 730–733
proximal phalanx fracture, 731
scaphoid fractures, 725–726
thumb dislocation, 726

thumb-phalanx fracture, 726–728
frostbite, 736
growth mechanism injury, 724
nail bed injuries, 733–734
replantations/transplantations, 735–736
tendon injuries. See *Tendon injuries.*
ulnar nerve compression syndromes, 456–458
Writer's cramp, 417–418

Xenografts, in nail bed avulsions, 41–42